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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,051	03/09/2005	Keigo Ikezoe	50340-185	6981

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EXAMINER	
MARTIN, ANGELA J	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
11/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,051	IKEZOE, KEIGO	
	Examiner	Art Unit	
	ANGELA J. MARTIN	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2009*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *18-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the Remarks filed on June 24, 2009. Applicant's arguments have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chizawa et al. EP 1030396 A1.

Chizawa et al., teach A polymer electrolyte fuel cell comprising: a membrane electrode assembly comprising a polymer film and a pair of electrodes formed on both surfaces of the polymer film; a downstream gas supply channel facing a specific electrode of the pair of the electrodes; an upstream gas supply channel which supplies a reaction gas to the downstream gas supply channel and is not facing the specific electrode; and a partition wall which is made from a porous material, is arranged substantially parallel to the polymer film, and partitions the downstream gas supply channel and the upstream gas supply channel (0029-0031).

The polymer electrolyte fuel cell as defined in claim 1, wherein the upstream gas supply channel comprises an upstream portion and a downstream portion, the

downstream gas supply channel comprises an upstream portion and a downstream portion, and the upstream gas supply channel and the downstream gas supply channel are disposed to cause the upstream portion of the upstream gas supply channel to overlap with the downstream portion of the downstream gas supply channel, with the partition wall being sandwiched therebetween, and to cause the downstream portion of the upstream gas supply channel to overlap with the upstream portion of the downstream gas supply channel, with the partition wall being sandwiched therebetween (0032-0033) .

The polymer electrolyte fuel cell as defined in claim 1, wherein the fuel cell further comprises a first plate made from a porous material, the partition wall is formed in the first plate, and the downstream gas supply channel is formed between the partition wall and the specific electrode (0033).

The polymer electrolyte fuel cell as defined in claim 3, wherein the first plate further comprises the upstream gas supply channel which overlaps with the downstream gas supply channel, with the partition wall being sandwiched therebetween (0036; Fig. 5).

The polymer electrolyte fuel cell as defined in claim 4, wherein the partition wall further comprises a through hole which supplies the reaction gas in the upstream gas supply channel to the downstream gas supply channel (Fig. 2B, ref 15a-15f).
The polymer electrolyte fuel cell as defined in claim 4, wherein the first plate comprises a plurality of ribs which separate a flow of the reaction gas in the upstream gas supply channel into a plurality of parallel flows and a plurality of ribs which separate a flow of

the reaction gas in the downstream gas supply channel into a plurality of parallel flows (Fig. 3A, 3B).

The polymer electrolyte fuel cell as defined in claim 4, wherein the first plate further comprises a pair of jetties which guide a flow of the reaction gas in the upstream gas supply channel into a substantially S-shape, and a pair of jetties which guide a flow of the reaction gas in the downstream gas supply channel into a substantially S-shape (Fig. 5, 7).

The polymer electrolyte fuel cell as defined in claim 3, wherein the pair of electrodes comprise an anode and a cathode, the specific electrode comprises the cathode, and the fuel cell further comprises a second plate made from a non-porous material, the second plate comprising an anode gas supply channel which faces the anode (0060).

The polymer electrolyte fuel cell as defined in claim 8, wherein the fuel cell further comprises a third plate made from a non-porous material, and the third plate comprises a coolant supply channel facing the second plate (0061).
The polymer electrolyte fuel cell as defined in claim 8, wherein the second plate comprises a coolant supply channel which is partitioned from the anode gas supply channel (0061).

The polymer electrolyte fuel cell as defined in claim 10, wherein the fuel cell is laminated with a second polymer electrolyte fuel cell having an identical structure, and further comprises a separator made from a material which does not permeate the coolant and the cathode gas, the separator being interposed between the first plate of

the first fuel cell and the second plate of the second fuel cell (0063).

The polymer electrolyte fuel cell as defined in claim 8, wherein the fuel cell further comprises a third plate which is made from a non-porous material and is located on the side of the first plate opposite to the cathode, and the upstream gas supply channel is formed in the third plate (0087).

The polymer electrolyte fuel cell as defined in claim 12, wherein the third plate further comprises a coolant supply channel which is partitioned from the upstream gas supply channel (0063).

The polymer electrolyte fuel cell as defined in claim 8, wherein the fuel cell is laminated with a second polymer electrolyte fuel cell having an identical structure, the second plate of the first fuel cell comprises the upstream gas supply channel and a coolant channel which are partitioned from each other while facing the partition wall of the first plate of the second fuel cell, and the partition wall of the second fuel cell comprises an impermeable portion which is formed of impregnated resin to prevent a coolant from permeating (0063).

The polymer electrolyte fuel cell as defined in claim 8, wherein the fuel cell is laminated with a second polymer electrolyte fuel cell having an identical structure, the second plate of the first fuel cell comprises the upstream gas supply channel and a coolant supply channel which are partitioned from each other while facing the partition wall of the first plate of the second fuel cell, and the first plate of the second fuel cell comprises a porous potion made of a porous material and facing the upstream gas supply channel of the first fuel cell, and a non-porous portion made of a non-porous

material and facing the coolant supply channel of the first fuel cell (0063).

The polymer electrolyte fuel cell as defined in claim 3, wherein the fuel cell is laminated with other fuel cells of an identical structure, the first plate further comprises a first through hole which constitutes an inlet manifold for distributing the cathode gas to the upstream gas supply channel of each fuel cell, a second through hole which constitutes an outlet manifold for collecting the cathode gas from the downstream gas supply channel of each fuel cell, and an impermeable layer formed on an inner circumferential surface of the first through hole and the second through hole and on an outer circumferential surface of the first plate, the impermeable layer functioning to prevent the reaction gas from permeating into the first plate (Fig. 5, 7).

Thus, the claims are anticipated.

Response to Arguments

3. Applicant's arguments filed 6/24/09 have been fully considered but they are not persuasive. Applicant argues that Chizawa et al., does not read on the application because "the temperature/humidity exchange portion 10 is not a component of the polymer electrolyte fuel cell 4" in the prior art of record. However, the temperature/humidity exchange portion of Chizawa et al., is "integrated" into the fuel cell stack (0044), and in "Fig 2A, the temperature/humidity exchange portion 10 is shown as disposed away from the cell stack 9 for convenience of explanation" (0043). Thus, the temperature/humidity exchange portion is not "outside" of the stack.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Voss et al., U.S. Pat. Application Pub. 2002/0058168 teach a solid polymer fuel cell system.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA J. MARTIN whose telephone number is (571)272-1288. The examiner can normally be reached on Monday-Friday from 10:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJM
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795